

**HIGH/LOW WORK FUNCTION METAL ALLOYS FOR INTEGRATED
CIRCUIT ELECTRODES AND METHODS OF FABRICATING SAME****Abstract of the Disclosure**

Integrated circuit electrodes include an alloy of a first metal and a second
5 metal having lower work function than the first metal. The second metal also may
have higher oxygen affinity than the first metal. The first metal may be Ru, Ir, Os, Re
and alloys thereof, and the second metal may be Ta, Nb, Al, Hf, Zr, La and alloys
thereof. Both NMOS and the PMOS devices can include gate electrodes of an alloy
of the first metal and the second metal having lower work function than the first
10 metal. The PMOS gate electrode may have a higher percentage of the first metal
relative to the second metal than the NMOS gate electrode. Thus, a common material
system may be used for gate electrodes for both NMOS and PMOS devices.

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